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PARKING SLOT AVAILABILITY CHECKING OVER IOT

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ABSTRACT:

An embedded system is a combination of software and hardware to perform a dedicated task. Some of the main devices used in embedded products are Microprocessors and Microcontrollers.

Microprocessors are commonly referred to as general purpose processors as they simply accept the inputs, process it and give the output. In contrast, a microcontroller not only accepts the data as inputs but also manipulates it, interfaces the data with various devices, controls the data and thus finally gives the result.

The "PARKING SLOT CHECKING OVER IOT" using PIC16F72 microcontroller is an exclusive project which is used for automatic monitoring of parking slot and displays on LCD.

INTRODUCTION

The project aims in designing a vehicle parking slot checking through IOT. This system comprises of a Microcontroller based monitoring system along with IR Sensors to know which of the slots are vacant.

Present day's car parking has become a major issue in urban areas with lack of parking facilities and increased amount of vehicles, due to this drivers who are searching for parking space they were roaming around the city in peak hours. This causes traffic, waste of time and money.

Methods: To solve those problems, this prototype is developed using sensor circuit and IOT. IR sensor is used to find the presence of the car and all details are accessed from remotely through IOT. Findings: This system helps user to find parking space availability with the help of Internet of Things (IOT) technology by providing parking free space information. The IOT maintains the database of the parked vehicles through a shared server.

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So drivers can know the status of parking area through the IOT.

Applications/ Improvements: This prototype developed for the parking system with less human interaction, increases flexibility and security. This system is employable in airports and multiplexes parking.

The intelligent device which performs the task is a Microcontroller. The IR sensor, WI-FI, and LCD display are interfaced to Microcontroller. The microcontroller continuously monitors the presence of vehicle through the IR sensors and data sends to the user by using WI-FI module and display at the LCD screen. To perform this task microcontroller is loaded with an intelligent program written using embedded 'C' language.

LITERATURE SURVEY

The thesis explains the implementation of "Parking Slot Checking over IOT"using PIC16F72 microcontroller. The organization of the thesis is explained here with:

Presents introduction to the overall thesis and the overview of the project. In the project overview a brief introduction of Microcontroller based parking slot vacancy checking and alerting through LCD and WI-FI and its applications are discussed.

Presents the topic embedded systems. It explains the about what is embedded systems, need for embedded systems, explanation of it along with its applications.

Presents the hardware description. It deals with the block diagram of the project and explains the purpose of each block. In the same chapter the explanation of microcontroller, IR sensor, power supplies, WI-FI and LCD are considered.

Presents the software description. It explains the implementation of the project using PIC C Compiler software.

Presents the project description along with heartbeat sensor module interfacing to microcontroller.

Presents the advantages, disadvantages and applications of the project.

Presents the results, conclusion and future scope of the project.

PROPOSED WORK

- Among these Microcontroller is of low cost processor and one of the main advantage of microcontrollers is, the components such as

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memory, serial communication interfaces, analog to digital converters etc.., all these are built on a single chip. The numbers of external components that are connected to it are very less according to the application.

- Microprocessors are more powerful than microcontrollers. They are used in major applications with a number of tasking requirements. But the microprocessor requires many external components like memory, serial communication, hard disk, input output ports etc.., so the power consumption is also very high when compared to microcontrollers.

RESULTS

The project "**Parking Slot Checking over IOT**" was designed such that vehicle parking slot checking using IOT and display on LCD screen.

CONCLUSION

Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested.

REFERENCES:

The sites which were used while doing this project:

1. www.wikipedia.com

2. www.allaboutcircuits.com

3.www.microchip.com

4.www.howstuffworks.com